

FIRST Impact Award - Team 2412

2023 - Team 2412
Team Number
2412
Team Nickname
Robototes
Team Location
Bellevue, WA - USA
Describe the impact of the <i>FIRST</i> program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in <i>FIRST</i> programs as mentors/sponsors.
Since 2020, all our alumni graduated high school (10% above SHS' average), and 75% declared STEM majors. Half of last year's class is still involved in robotics through college teams including U. of Washington and U. of Michigan. Many are still involved in FIRST, with over 200 hours volunteered. One alum helped start team 9036. Through mentor connections, 3 members had internships at our biggest sponsor, Intellectual Ventures. Currently, 25% of our 20 mentors are returning alumni.
Describe your community along with how your team addresses its unique opportunities and circumstances.
At Sammamish High School, 38% of students do not speak English at home and 34% qualify for free/reduced lunch-a rate double our district's average. The team fee is entirely free for students with economic hardships. This offers the opportunity to spread robotics to all, including historically marginalized groups. We created a welcoming environment no matter your background; our team doubled in size, going from 35 to 71, as well as our percent of POC, from 37% to 63% in the past 3 years.
Describe the team's methods, with emphasis on the past 3 years, for spreading the FIRST message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?
This summer, the Robototes accepted a \$50,000 check to FIRST WA at a Mariners game, educating the mission of FIRST and 2412 to an estimated 300,000 people. A month later, we had our fourth annual appearance at the Bellevue Arts Summer Fair, which brings in 300,000 people per year. We also appear at their Family Fun Days throughout the year, reaching 2000 per event. During the school year, we have STEM nights for elementary schoolers, introducing 20 kids per session to FLL through Mindstorms.
Please provide specific examples of how your team members act as role models within the FIRST community with emphasis on the past 3 years.
In 2021 when Robot Reboot was cancelled, 2412 stepped up to plan Bordie Recharge in 4 weeks, bringing in 19 teams. FIRST WA was impressed, so we became a Week 3 event attended by 31 teams.

This is now tradition; we hosted the offseason event Bordie React and Week 4 this season. This has helped our members amass over 2000 volunteer hours since 2020. In the spirit of coopertition, after our 2022 Chairman's win, we assisted team 4682 with the Impact Award this year.

Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.

We started FTC team 16750 in 2019, since then we continue to support, along with assist their sister team 20403. We also helped start and assist FRC rookie team 9036. We are assisting FTC teams 11970 and 20345 with awards and programming, and in starting a FRC team at Woodinville High. We helped the Bear Creek School start an FTC team. The Robototes were one of two FIRSTWA teams in the Student Association for STEM

Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?

Advocacy. We lobbied five Congressmen to formally support the "Every Student Succeeds Act" to pass \$1.22 billion for STEM education, especially for underrepresented areas. Additionally, since 2021, we have hosted 4 Arduino/FLL camps instructing 105 students. Our FLL Alliance meetings were attended by 50 families in addition to another 50 in our Facebook group, connecting youth to teams.

Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years

In 2019, the Robototes founded the Bellevue Alliance (BA), comprised of 6 local teams, to secure coach stipends. In 2022, we co-authored the BA playbook to help other teams start alliances, even meeting with team 7230 to form the Irvine Alliance. We also started the Global First Exchange last year, meeting regularly with 6 teams: 1772, 6902 (Brazil); 8725, 6083 (Taiwan); 6968 (Netherlands); 6909 (Japan). Our meeting with FIRST Japan executives inspired 6902 to start the Japan Alliance.

Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.

1) We have been working with clubs such as BSU, AAPI, and Latino Heat to double our POC percentage to 63% and our nonmale percentage to 49%. With a 53% female leadership team, women aren't pushed out of our leadership roles. We have a partnership with Girl Scouts of Western Washington to help over 25,000 girls earn stem badges - empowering young girls to TAKE CHARGE of their future. Alongside 9 other teams, we marched in Seattle Pride, which was attended by over 400,000 people.

Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future

Documentation is key for sustainability, so we take extensive notes. Also, we authored the Advocacy Playbook and got other BA teams to join our efforts to utilize the power of coopertition. Team members must attend at least one outreach event and abide to a GP-centric handbook. Lastly, our Under My Wing training is three tiers of projects varying in difficulty that also pairs rookies with a buddy, so all learn at a proper pace while having fun

Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the

past 3 years

The 2412 Robototes' Business Team actively works to build our network of sponsors; this year we've had 7 new sponsors. We use emails, forms, phone calls, and flyers to deliver our message of innovation, creativity, and collaboration, proving effective with an outstanding 65% repeat sponsors. Personal connections, social media, and YouTube videos for sponsors to watch are all used to ensure sustainability. We've presented to sponsors and invited them to our shop to engage with students.

Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.

Communication is our biggest challenge. To improve, in build season, we have a robot lead to monitor and check in with technical subteams. Starting each week with "stand up" meeting going over progress reports and what should be done sets expectations. A frequently updated calendar and extensive leadership meeting notes provides accessible info to members. On a more fun note, introduction of monthly movie nights has let members of different subteams bond (and get to watch Ratatouille!).

Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.

We fight to make FIRST available to all. Since 2022, we have met with State Sen. Lisa Wellman and Rep. Sharon Tomiko Santos to give FIRST CTE credit through House Bill 1599. We met with Sen. Patty Kuderer, Rep. Vandana Slatter, city council member Janice Zahn, school board directors Dr. Christine Chew and Jane Aras, and more to educate about FIRST. This session, 96% of the WA Schoolboard Directors' Association voted to support robotics in the upcoming Legislative Session

Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.

We strive to improve our community. Consequently, we have attended community clean ups in partnership with Overdue Seattle, collecting over 150 pounds of garbage since 2022. This winter, we were official volunteers at the TikTok Runs in the Family event--one of just two nationally. We also helped run the Chinese Institute of Engineers MathComp, attended by roughly 1,000 kids. Lastly, this season, we started a weekly free tutoring service, for up to a dozen youth per session.

Essay

When the Robototes started 16 years ago at Sammamish High School, we fell in love with robotics, and made it our mission to spread our joy of FIRST to everyone. However, our work is far from complete, over a decade later we've seen and experienced the restricted shop space and inadequate funding that

is stripping students of the ability to be involved in this incredible community. We have evolved our mission so the next generation can be inspired to TAKE CHARGE of their future. To support the FIRST community, the Robototes host TWO events per year, bringing bots together in the spirit of Coopertition. After the crushing pause of the 2020 and 2021 seasons, some teams never had a chance to compete with robots on which they worked so hard. To give all teams a chance to compete with their robot, we TOOK CHARGE by planning and hosting the Bordie Recharge event when Robot Reboot was cancelled. With only 4 weeks to plan, the event was a hit with 17 teams and 19 bots competing, prompting FIRST WA to invite us to host a district event. 31 teams competed at our Sammamish week 3 last year, and 16 teams and 21 bots competed in our 2022 off-season event, Bordie React. This has helped us and our still active alumni to amass over 2,000 FIRST volunteer hours over the past 3 years. Our love of hosting won't stop, we are preparing for both our Week 4 district event and our 2023 off season, Bordie Charged! Hosting events is not the only way we engage with teams, we also help them reach their full potential by starting, mentoring, and assisting. In 2019, after the amazing success of FRC at SHS, we TOOK CHARGE, and started FTC team 16750, the Technototes. Since then, we have continued our support by providing shop space, mentors, and resources, helping them thrive to the point where they started a second team, 20403 which we assist with parts, tools, and training. The Technototes qualified for states 3 years in a row and were 2022 Washington state winning alliance captain. Combined, these teams have 26 students who have discovered a joy of FIRST. Such developments inspired us to continue to spread FIRST beyond our campus. This summer, when we realized that there was only one school in our district that did not have an FRC team, we decided to change that. In collaboration with the Bellevue Alliance and a 2412 alum, we helped start team 9036 Ramen Robotics. With mentors, tools, and knowledge, we helped the kids of Big Picture get excited about FIRST and start their rookie year off right. We spread our knowledge to teams around the world by posting online weekly as part of The Open Alliance showing an inside look at our design process. This winter, we assisted FTC teams 11970 and 20345 at Woodinville HS on FRC Java programming in hopes to aid their goal to start a FRC team at the school. Additionally, following our Chairman's Regional win last year, we assisted Teams 4859, 948, 1899, 4131, and 3786 with the awards process in the spirit of Coopertition, from Zoom meetings to listening to pitches, as well as releasing our essay and video to be a resource for future students. Even with all this, the Robototes' main way of spreading FIRST isn't through starting teams, but rather advocating to politicians on a local, state, and federal level. In 2021 the Robototes partnered with the Student Association for STEM Advocacy (SASA). We met virtually with Washington DC representatives where we spent hours learning how to lobby and create pitches. That summer we lobbied five Congressmen to support the "Every Student Succeeds Act" title 4-part A which would allocate \$1.22 billion for STEM education with a focus on underrepresented areas. This year will be our second year being a registered SASA team and we are sending students to DC this summer to advocate with Congress. Motivated by this immense success, our advocacy efforts have only grown. When we noticed that multiple teams in our area had a difficult time finding and securing shop space, we TOOK CHARGE by lobbying, regularly speaking at school board meetings, with district board members, activity directors, and our principal. Our efforts have paid off—this session, 96% of the WA Schoolboard Directors' Association voted to support State Funding for Full Breadth of Co-Curricular Activities, with a heavy focus on STEM in the upcoming Legislative Session. We are bringing this impact to the entire state of Washington with the FAIR (fostering access to education in robotics) bill, where we are lobbying for an equitable space for every team, a paid coach for every team, and school credit for participation in robotics. Our reach includes, representatives Sharon Tomiko-Santos, Lisa Callan, Vandana Slatter, My Linh-Thai, as well as Senator Lisa Wellman. We hosted student-led discussions educating on FIRST and its importance, and by extent the necessity of its funding. In hopes to teach others how to TAKE CHARGE in their area, we created an Advocacy pamphlet which we passed out to ~100 teams at Worlds. In 2019, to respond to the near collapse of team 949, we

founded the Bellevue Alliance (BA), comprised of 7 local FRC teams. we created a support system in which we share resources, mentors, and fun. We **TOOK CHARGE** as a group by cooperating to start Ramen Robotics at Big Picture, we now share resources and mentors with Ramen Robotics. We always make sure that BA members feel welcome to attend our meetings and share their own experiences. Together we've created a large family in which we all support and help each other grow. Our alliance work is not just about supporting local teams but the worldwide FIRST community. In partnership with the BA, we co-authored the BA Playbook in 2022 to instruct other FIRST teams on how to form alliances. Following the book's launch, we were reached out to by 7230 – Mythic Mechanix, who was inspired to begin the effort to start the Irvine Alliance in California. On an even grander scale, the Robototes created the FIRST Global Exchange last year to strengthen FRC relations across the world by discussing problems and successes of our teams and regions through Zoom. Currently, we meet with 6 teams: 1772, 6902 (Brazil); 8725, 6083 (Taiwan); 6968 (Netherlands); 6909 (Japan). Our most successful development through this program, although before it was officially branded, was when our past team captain met with FIRST Japan executives in 2021, sharing our team's fundraising strategies and the impact of the BA. This inspired team 6909 to start the Japan FIRST Alliance. Robototes **TOOK CHARGE** of FIRST'S future by hosting 4 FLL and Arduino hybrid camps since 2021, instructing 105 students on robotics fundamentals. Our team members planned, advertised, and ran the camps, collecting over 430 volunteer hours. Currently, another is planned for this midwinter break with a projected attendance of 70+. In the 2019-20 season, we volunteered weekly to teach STEM activities at Stevenson Elementary, a Title 1 school with a 40% free and reduced lunch rate, collecting over 200 volunteer hours. To help families that are interested in robotics we created FIRST Lego League Alliance of Bellevue (FLLAB), which we founded in 2021. Its website provides resources on how to join local FLL teams as well as what FLL is in general. The 50 person Facebook group directly pairs local youth to teams to start their FIRST journey. Our in person informative nights and workshops, which also aid parents register their children, were attended by more than 50 families. Traditional outreach is paramount to our mission. This summer, we had the privilege of being on national television at a Mariners Game accepting a \$50,000 check for FIRSTWA, showing the 40,000 people in attendance what FIRST is all about. Also, this summer, we resumed our third year hosting a booth at the Bellevue's Summer Arts Fair, attended by 300,000 people. Family Days at the Bellevue Arts Museum are some of our staple outreach events, reaching ~2000 people per session, alongside science nights at elementary schools such as Spiritridge, Woodridge, and Woodmoor. Just this January, we became the first official robotics partners with the Girl Scouts of Western Washington, with a reach over 25,000 young girls to earn badges through education in robotics. We attended Seattle Pride along with 13 other teams as representatives of FIRST Washington to over 400,000 people. We host weekly tutoring sessions for homework help to local youth, and in partnership with Overdue, a cleanup organization, in total we have picked up over 150 pounds of trash from our community. We value outreach within our school campus. By cooperating with clubs such BSU, AAPI, and Latino Heat, as well as participating in assemblies, we doubled our team members going from 35 to 71 people that's roughly 1/12 of the school population! In leadership, we make sure that women are not devalued, with a more than 50% female participation in leadership, we encourage all to stand up and **TAKE CHARGE** on our team. We celebrate people from all walks of life, with a POC percentage of 63% and non-male percentage of 49%, we truly value Diversity, Equity, and Inclusion on our team. We strive each day to create a safe and welcoming environment for everyone who is interested in STEM. For over 15 years, the Robototes has used FIRST to transform students into leaders, building brilliant 21st century skilled workers alongside bots. From advocacy to outreach to event hosting, we fight nonstop so students across the globe can join FIRST and experience the same transformation, ensuring that next generation are ready to lead by example, to shape the future, to **TAKE CHARGE!** ;

